

Appln No. 10/724,957
Amdt date December 21, 2007
Reply to Office action of June 21, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A port acceleration apparatus for a fibre channel arbitrated loop, the fibre channel arbitrated loop coupling that connects a plurality of disks~~devices~~, the apparatus comprising:

at least one fibre channel input configured to receive data from the fibre channel arbitrated loop;

at least one fibre channel output configured to send data to the fibre channel arbitrated loop;

at least one device input configured to receive data from at least one of the disks~~devices~~;

at least one device output configured to send data to at least one of the disks~~devices~~;

at least one controller configured to process at least one fibre channel primitive flowing in the fibre channel arbitrated loop to generate, based on the at least one fibre channel primitive, at least one signal indicative of whether data from the at least one fibre channel input is to be routed to the at least one fibre channel output or to the at least one device output; and

at least one multiplexer configured to route, in accordance with the at least one signal, the data received by the at least one fibre channel input to the at least one fibre channel output or to the at least one device output.

Claim 2. (Original) The apparatus of claim 1 wherein the at least one fibre channel primitive includes at least one of an ARB primitive and an OPN primitive.

Claim 3. (Cancelled)

Claim 4. (Cancelled)

Claim 5. (Original) The apparatus of claim 1 wherein the at least one signal is indicative of at least one source of data to be routed to the at least one device output.

Claim 6. (Cancelled)

Claim 7. (Original) The apparatus of claim 1 wherein the apparatus comprises an integrated circuit.

Claim 8. (Cancelled)

Claim 9. (Currently Amended) A method for accelerating traffic flow in a fibre channel arbitrated loop that connects a plurality of devices including at least one disk, the method comprising:

receiving, from the fibre channel arbitrated loop, data comprising at least one fibre channel primitive;

processing the at least one fibre channel primitive to determine whether to route data received from the fibre channel arbitrated loop to the at least one disk or to the fibre channel arbitrated loop ~~generate at least one signal indicative of at least one source of data to be routed to the fibre channel arbitrated loop~~; and

routing, in accordance with the determination ~~at least one signal~~, the data received from the fibre channel arbitrated loop ~~back to the fibre channel arbitrated loop~~.

Claim 10. (Original) The method of claim 9 wherein the at least one fibre channel primitive includes at least one of an ARB primitive and an OPN primitive.

Claim 11. (Currently Amended) The method of claim 9 further comprising routing, in accordance with the determination ~~at least one signal~~, data received from at least one of the devices to the fibre channel arbitrated loop.

Claim 12. (Currently Amended) The method of claim 9 further comprising routing, in accordance with the determination ~~at least one signal~~, at least one ARB primitive to the fibre channel arbitrated loop.

Claim 13. (Cancelled)

Claim 14. (Currently Amended) The method of claim 13 further comprising routing to the at least one disk device output, in accordance with the determination at least one signal, data received from the fibre channel arbitrated loop or at least one CFW primitive.

Claim 15. (Currently Amended) A data routing apparatus for at least one disk device associated with a data loop, the apparatus comprising:

- at least one data loop input configured to receive data from the data loop;
- at least one data loop output configured to send data to the data loop;
- at least one controller configured to process at least a portion of the data received by the at least one data loop input to generate at least one signal indicative of at least one source of data to be routed to the at least one data loop output; and
- at least one multiplexer configured to route data received by the at least one data loop input to the at least one data loop output or the at least one disk device, in accordance with the at least one signal, ~~data received by the at least one data loop input or data associated with the at least one device.~~

Claim 16. (Currently Amended) The apparatus of claim 15 wherein the processing comprises determining whether the at least one disk device is authorized to participate in a conversation currently associated with the data loop.

Claim 17. (Currently Amended) The apparatus of claim 15 wherein the processing comprises determining whether the at least one disk device has successfully arbitrated to gain access to the data loop or is communicating with at least one other device that has successfully arbitrated to gain access to the data loop.

Claim 18. (Currently Amended) The apparatus of claim 15 further comprising at least one device input configured to receive data from the at least one disk device.

Claim 19. (Cancelled)

Claim 20. (Cancelled)

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Claim 21. (Currently Amended) The apparatus of claim 15 further comprising at least one device output configured to send data to from the at least one disk device.

Claim 22. (Cancelled)

Claim 23. (Cancelled)

Claim 24. (Original) The apparatus of claim 15 wherein the apparatus comprises an integrated circuit.

Claim 25. (Original) The apparatus of claim 15 wherein the apparatus comprises a hub.

Claim 26. (Original) A method for routing data to at least one device associated with a data loop, the method comprising:

receiving data from the data loop;

processing at least a portion of the data from the data loop to generate at least one signal indicative of at least one source of data to be routed to the data loop; and

routing, in accordance with the at least one signal, data from the data loop back to the data loop.

Claim 27. (Original) The method of claim 26 wherein the processing comprises determining whether the at least one device is authorized to participate in a conversation currently associated with the data loop.

Claim 28. (Original) The method of claim 26 wherein the processing comprises determining whether the at least one device has successfully arbitrated to gain access to the data loop or is communicating with another device that has successfully arbitrated to gain access to the data loop.

Claim 29. (Original) The method of claim 26 further comprising routing, in accordance with the at least one signal, data from the at least one device to the data loop.

Claim 30. (Original) The method of claim 26 further comprising routing, in accordance with the at least one signal, data used to arbitrate for access of the data loop to the data loop.

Claim 31. (Original) The method of claim 26 wherein the at least one signal is indicative of at least one source of data to be routed to the at least one device.

Claim 32. (Original) The method of claim 31 further comprising the step of routing to the at least one device, in accordance with the at least one signal, data from the data loop or other data.

Claim 33. (Original) An apparatus that communicates via a data loop, the apparatus comprising:

- at least one processor configured to process data associated with the data loop;
- at least one data loop input configured to receive data from the data loop;
- at least one data loop output configured to send data to the data loop;
- at least one controller configured to process at least a portion of the data from the at least one data loop input to generate at least one control signal indicative of whether the data from the at least one data loop input is to be routed to the at least one processor; and
- at least one multiplexer configured to route, in accordance with the at least one control signal, the data from the at least one data loop input to the at least one data loop output.

Claim 34. (Original) The apparatus of claim 33 wherein, in accordance with the at least one control signal, the at least one multiplexer routes to the at least one data loop output either the data from the data loop or data from the at least one processor.

Claim 35. (Original) The apparatus of claim 33 wherein the apparatus comprises a data storage system.

Claim 36. (Original) The apparatus of claim 33 wherein the apparatus comprises a disk-based data storage system.